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XUẤT KHẨU THUỶ SẢN VIỆT NAM TRONG BỐI CẢNH HIỆP ĐỊNH ĐỐI TÁC TOÀN DIỆN VÀ TIẾN BỘ XUYÊN THÁI BÌNH DƯƠNG (CPTPP) VÀ HIỆP ĐỊNH THƯƠNG MẠI TỰ DO VIỆT NAM - EU (EVFTA): PHÂN TÍCH SO SÁNH TÁC ĐỘNG THƯƠNG MẠI

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Tóm tắt

Bài viết này nhằm phân tích tác động của hai hiệp định thương mại lớn, Hiệp định Đối tác Toàn diện và Tiến bộ Xuyên Thái Bình Dương (CPTPP) và Hiệp định Thương mại Tự do Việt Nam - EU (EVFTA), đối với xuất khẩu thủy sản của Việt Nam. Sử dụng phương pháp tiếp cận so sánh, nghiên cứu đánh giá tác động thương mại của các hiệp định này đối với hiệu suất xuất khẩu thủy sản của Việt Nam từ năm 2004 đến 2023. Mô hình trọng lực được áp dụng để định lượng các tác động, với dữ liệu được thu thập từ Trung tâm Thương mại Quốc tế (ITC), Ngân hàng Thế giới và Tổ chức Thương mại Thế giới (WTO). Kết quả cho thấy CPTPP đã tác động tích cực đến xuất khẩu thủy sản

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của Việt Nam, đặc biệt là sang các thị trường như Canada, Mexico và Nhật Bản, thông qua việc giảm thuế và cải thiện khả năng tiếp cận thị trường. Tuy nhiên, EVFTA, mặc dù mang lại lợi ích tương tự, nhưng mang tới các thách thức do các quy định nghiêm ngặt như các biện pháp IUU của EU, dẫn đến tác động hỗn hợp đối với xuất khẩu sang EU. Nghiên cứu nhấn mạnh sự cần thiết phải cải thiện việc tuân thủ các quy định quốc tế, đầu tư vào các phương thức bền vững và các chiến lược nâng cao khả năng cạnh tranh để tối đa hóa lợi ích từ cả hai hiệp định.
Từ khóa: CPTPP, EVFTA, xuất khẩu thủy sản, mô hình trọng lực, Việt Nam

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VIETNAM'S FISHERY EXPORTS UNDER COMPREHENSIVE AND PROGRESSIVE AGREEMENT FOR TRANS-PACIFIC PARTNERSHIP (CPTPP) AND THE EU - VIETNAM FREE TRADE AGREEMENT (EVFTA): A COMPARATIVE ANALYSIS OF TRADE IMPACTS

Abstract

This research aims to analyze the impact of two major trade agreements, the Comprehensive and Progressive Agreement for Trans-Pacific Partnership (CPTPP) and the European Union-Vietnam Free Trade Agreement (EVFTA), on Vietnam's fishery exports. Using a comparative approach, the study evaluates the trade effects of these agreements on Vietnam's fishery export performance from 2004 to 2023. The gravity model is employed to quantify the effects, with the data sourced from the International Trade Centre (ITC), World Bank, and the World Trade Organization (WTO). The results show that the CPTPP has positively influenced Vietnam's fishery exports, particularly to markets such as Canada, Mexico, and Japan, through tariff reductions and improved market access. However, the EVFTA, while offering similar benefits, has introduced challenges due to stringent regulations such as the EU's Illegal, Unreported, and Unregulated (IUU) fishing measures, leading to a mixed impact on exports to the EU. The research highlights the need for improved compliance with international regulations, investment in sustainable practices, and strategies to enhance competitiveness to maximize the benefits of both agreements.
Keywords: CPTPP, EVFTA, fishery exports, gravity model, Vietnam

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1. Introduction

The impact of preferential trading arrangements (PTAs) on national economies has been extensively studied, with varying opinions regarding their benefits (Baccini, 2019). A PTA is a trade agreement that allows countries to open their economies to other nations by reducing trade barriers,

often to zero, while maintaining restrictions for non-signatory countries. The primary forms of PTAs commonly referenced in academic literature are Free Trade Agreements (FTAs) and Customs Unions (Krueger, 1997).

The number of FTAs surged following the failure of the Doha Development Round, which took place in 2001 under the World Trade Organization (WTO). This round was intended to encourage countries to lower their trade barriers, but the inability to reach a consensus led to an increased reliance on FTAs. Vietnam, in particular, capitalized on FTAs to enhance its economic integration with the global market. By 2020, Vietnam had joined 13 FTAs, with three more under negotiation as of 2022. Among these, two modern FTAs, the EU-Vietnam Free Trade Agreement (EVFTA) and the Comprehensive and Progressive Agreement for Trans-Pacific Partnership (CPTPP), are considered to offer substantial benefits to the Vietnamese economy.

Prior to the EVFTA negotiations, Vietnam had entered into numerous bilateral agreements with European countries during the 1990s, significantly boosting its trade with the EU (Nguyen, 2016). Negotiations for an FTA with the EU commenced in 2012, focusing on trade in goods and services, investment, and rules of origin. After eight years of negotiation, the EVFTA came into effect in August 2020, eliminating 99% of tariffs between the two regions (European Commission, n.d.). Similarly, the CPTPP, which was established in 2018 with six founding members—Mexico, Japan, Singapore, New Zealand, Canada, and Australia—was later joined by Vietnam in January 2019, which encompasses a market of 500 million people (United Kingdom. Department for Business and Trade, 2023). Through this agreement, Vietnam gains access to significant markets across Asia, the Americas, and Oceania.

At the same time, Vietnam's fishery sector has been a cornerstone of its economy, serving as a significant source of employment and export revenue. The nation's strategic geographic location, coupled with its extensive coastline, has endowed it with abundant marine resources, facilitating a thriving fishery industry. In recent years, Vietnam has actively pursued international trade agreements to bolster its economic integration and expand its export markets. Notably, the Comprehensive and Progressive Agreement for Trans-Pacific Partnership (CPTPP) and the European Union-Vietnam Free Trade Agreement (EVFTA) have been pivotal in shaping the trajectory of Vietnam's fishery exports. These agreements aim to reduce trade barriers, enhance market access, and foster economic cooperation between member countries. Understanding the specific impacts of these agreements on Vietnam's fishery exports is crucial for policymakers, industry stakeholders, and researchers alike.

This paper aims to analyze the impact of CPTPP and EVFTA on Vietnam’s fishery exports through a comparative assessment. It reviews existing studies, examines trade provisions, and identifies key differences between the agreements. Using the gravity model and regression analysis,

the study evaluates trade impacts and offers policy recommendations to enhance Vietnam's fishery sector competitiveness.

Research Problem

While the CPTPP and EVFTA are anticipated to offer substantial benefits to Vietnam's fishery exports, the extent and nature of these benefits remain under-explored. Existing studies have primarily focused on the general advantages of these agreements, with limited comparative analyses specifically targeting the fishery sector. There is a need to comprehensively assess how each agreement has influenced Vietnam's fishery exports, identify the challenges encountered, and determine the overall effectiveness of these trade pacts in promoting the sector's growth.

Research Objectives

- To evaluate the effects of the CPTPP and the EVFTA on Vietnam's fishery exports and to conduct a comparative analysis of the trade impacts of them on Vietnam's fishery sector, identifying unique advantages and challenges associated with each agreement.
- To provide policy recommendations aimed at maximizing the benefits of these trade agreements for Vietnam's fishery exports.
- To identify and analyze the major challenges affecting Vietnam's fishery exports under the CPTPP and EVFTA, including regulatory, environmental, and market-related barriers.
- To evaluate the extent to which these challenges hinder Vietnam's ability to fully capitalize on the opportunities provided by the CPTPP and EVFTA.

Research Questions

- How has the CPTPP affected the volume and value of Vietnam's fishery exports since its implementation?
- What specific changes have occurred in Vietnam's fishery export markets under the EVFTA, and how have these changes impacted export performance?
- In what ways do the trade impacts of the CPTPP differ from those of the EVFTA concerning Vietnam's fishery sector?
- What strategies can be employed to overcome challenges and enhance the benefits derived from these trade agreements for Vietnam's fishery exports?
- How do non-tariff barriers, particularly IUU regulations under the EVFTA and environmental standards under the CPTPP, impact the export performance and compliance capacity of Vietnam's fishery sector?

2. Literature review

Vietnam's integration into global trade frameworks, notably through the Comprehensive and Progressive Agreement for Trans-Pacific Partnership (CPTPP) and the European Union-Vietnam Free Trade Agreement (EVFTA), has significantly impacted its fishery export sector. A comprehensive analysis of existing literature reveals insights into these impacts and identifies areas requiring further research.

2.1. Previous studies of Vietnam's fishery export under CPTPP

The CPTPP has been instrumental in enhancing Vietnam's fishery exports. A study by Vu, Le and Masciarelli, 2020 employed the Global Simulation Analysis of Industry-Level Trade Policy (GSIM) model to assess the agreement's effects. The findings indicate that the CPTPP positively influences Vietnam's fisheries exports, notably by facilitating access to markets like Mexico, a significant North American market. Additionally, the agreement is expected to bolster export earnings from Japan. All sub-sectors within the fishery industry are anticipated to experience positive outcomes, benefiting both consumers/importers and producers/exporters.

Further analysis by the Vietnam Association of Seafood Exporters and Producers (VASEP) highlights that the CPTPP has led to a notable increase in seafood exports to member countries. Between 2018 and 2023, the share of Vietnam's seafood exports to CPTPP countries rose from 25% to nearly 27%. Markets such as Canada, Chile, Peru, Singapore, Malaysia, and Australia have shown robust growth, reflecting enhanced competitiveness due to the agreement.

A regression analysis by the Vietnam Academy of Social Sciences (VASS) identifies several factors positively influencing Vietnam's seafood exports to CPTPP member countries, including the GDP of the importing country, Vietnam's population, the real exchange rate, and participation in free trade agreements. Conversely, geographical distance negatively impacts exports, underscoring the importance of proximity in trade relations.

Studies on the impact of CPTPP on Vietnam's fisheries sector indicate that the fisheries sector of Vietnam will enjoy the benefits from the Agreement. Hoang et al. (2014) show that the fisheries industry will benefit from TPP as about 70.1 percent of Vietnamese fishery enterprises are expected to have opportunities to increase exports after the TPP Agreement comes into effect. Hoang et al. (2014) believe that the fisheries sector may increase exports in the short term, but the advantages from TPP may be nullified from non-tariff barriers, such as SPS, TBT and ROO (Nguyen, 2019) overviews opportunities and challenges for Vietnam exports when Vietnam joins CPTPP. Research shows that Vietnam will be one of the countries that gain many benefits when participating in CPTPP, and fishery products will also be one of the sectors that receive such benefits through the removal of tariff and customs barriers from the member states.

2.2. Previous studies on Vietnam's fishery export under EVFTA

The European Union-Vietnam Free Trade Agreement (EVFTA), which came into effect on August 1, 2020, has significantly shaped Vietnam's fishery exports to the European market. Various studies have explored its impact, highlighting both opportunities and challenges for the sector.

One prominent analysis by Doan and Nguyen (2021) applied the SMART model to evaluate the agreement's influence on Vietnam's agricultural exports, particularly in the fishery sector. Their research demonstrates that tariff eliminations under the EVFTA could substantially boost Vietnam's agricultural trade, with fishery products showing the greatest potential for expansion.

Ngo et al. (2024) explored the evolving trajectory of Vietnam's seafood exports since the EVFTA's implementation. While initial export growth was promising, their findings suggest that fluctuating consumer demand and increasing regulatory pressures have led to inconsistencies in export performance. Shrimp and tuna have benefitted significantly, whereas pangasius continues to face stiff competition from EU domestic producers. The study emphasizes the importance of improving product quality and branding to ensure Vietnam maintains its competitive edge in the European market

Beyond trade projections, Pham et al. (2024) took a broader strategic approach, utilizing the SWOT model to assess Vietnam's position in the EU fishery market under the EVFTA. Their study highlights that the agreement gives Vietnam a competitive edge over non-FTA exporters such as Thailand and India. However, they also point to significant compliance challenges, particularly regarding the EU's stringent sanitary and phytosanitary (SPS) regulations. Strengthening product traceability and sustainable production practices emerges as a key recommendation from their analysis

Taken together, these studies highlight the transformative impact of the EVFTA on Vietnam's fishery exports while also underscoring key challenges that remain. To fully capitalize on the agreement's benefits, stakeholders must address compliance barriers, enhance supply chain traceability, and adopt market-oriented strategies that promote differentiation and sustainability in the EU market.

2.3. Research gap

While existing studies have examined the impacts of CPTPP and EVFTA on Vietnam's fishery exports, they primarily focus on individual agreements rather than a direct comparison of their trade effects. Research has analyzed market access improvements, tariff reductions, and regulatory challenges under each agreement, but a comprehensive comparative analysis of how CPTPP and EVFTA differently shape Vietnam's fishery export performance remains limited. Additionally, previous studies rely on various economic models (GSIM, SMART, and SWOT), yet there is a lack

of empirical assessment using the Gravity model to quantify trade impacts systematically. Moreover, limited attention has been given to the interplay of non-tariff barriers, such as SPS and TBT regulations, across these two agreements. This study aims to fill these gaps by providing a comparative evaluation of the trade effects of CPTPP and EVFTA on Vietnam's fishery exports, employing a Gravity model approach to offer deeper policy insights.

3. Current situation of Vietnam's fishery industry and fishery export

As the third-largest seafood exporter in the world, Vietnam's fishing industry is now a vital part of the national economy and exports. Vietnam has become a major exporter in international fish markets, and its seafood exports have hit impressive milestones in recent years. Despite its achievements, Vietnam is dealing with several difficult issues, such as raw material shortages, increased international competition, climate change, and rising transportation costs.

3.1. Vietnam's seafood export performance.

Vietnam's seafood exports reached a record of $10 billion in 2024, a 13% rise compared to the previous year- demonstrating the resilience and growth potential of the industry - shown in Figure 1. The main contributions were shrimp, pangasius fish or catfish, and tuna. Shrimp exports reached 4 billion dollars, making a 13% increase. In comparison, pangasius exports grew by about 10% to 2 billion dollars despite facing difficulties such as rising shipping costs. There was also a strong rise experienced by tuna exports, which climbed to 1 billion dollars – a 17% increase (VASEP, 2024; VASEP, 2025)

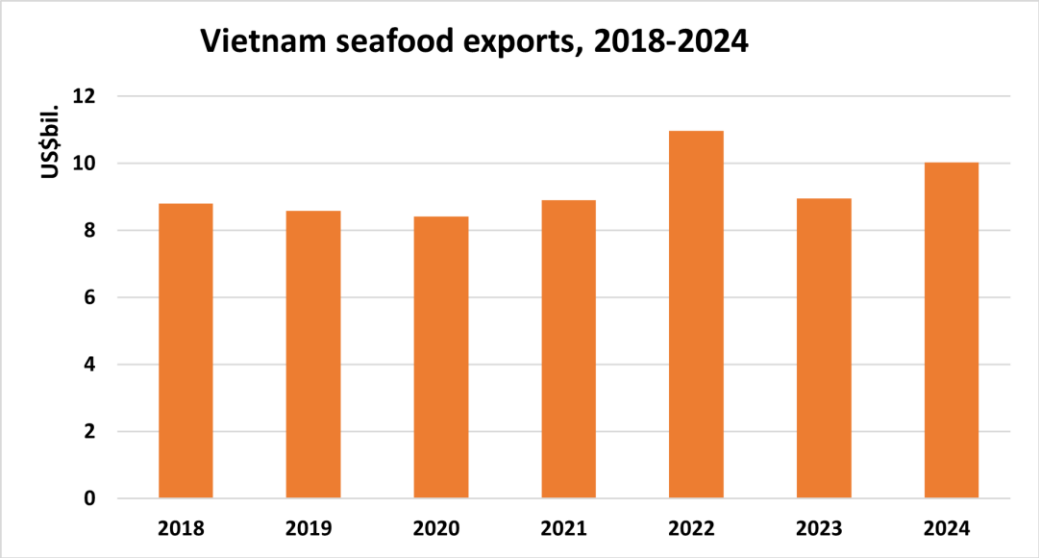

Figure 1. Vietnam's seafood exports, 2018 – 2024

Source: Vietnam Association of Seafood Exporters and Producers

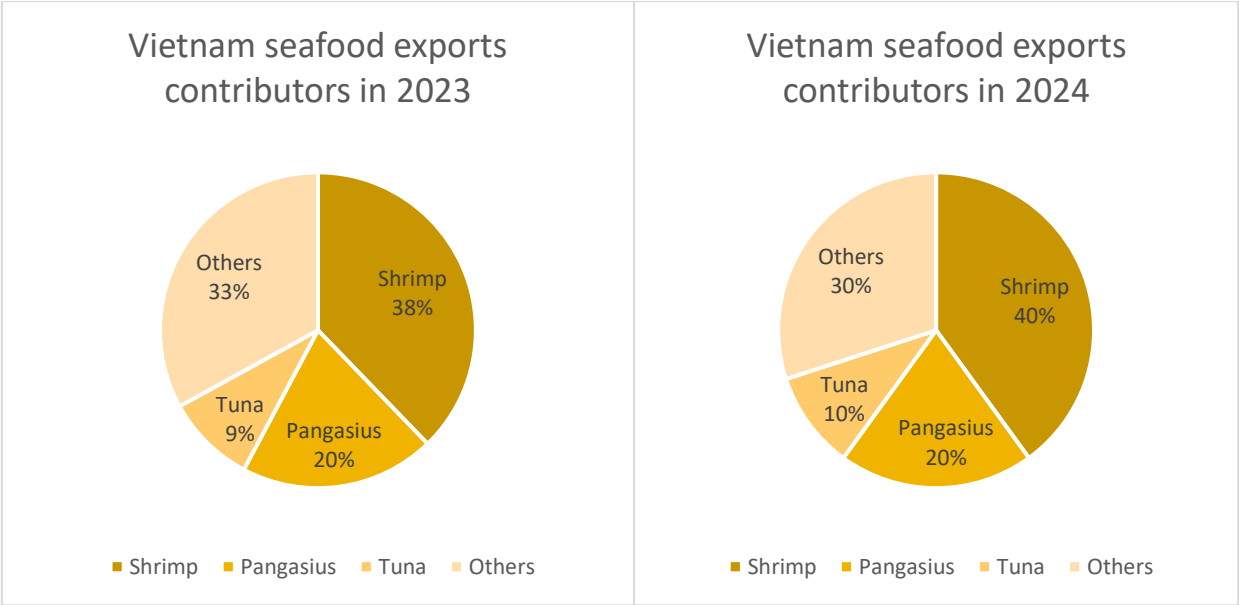

Figure 2. Vietnam's seafood export contributors in 2023 and 2024

Source: Vietnam Association of Seafood Exporters and Producers

Several factors worldwide have contributed to this sustained growth. Our research has found that, in 2024, several major economies, including the United States, China, and the European Union (EU), have experienced a recovery, although the growth rates vary significantly across countries. The global seafood market, particularly in key regions such as the United States, EU, Japan, and China, is expected to sustain high demand. In addition, markets in Africa, Southeast Asia, and the Middle East may experience growth, presenting opportunities for the export of high-quality seafood products from Vietnam

In addition, Vietnam's current participation in 16 free trade agreements, such as the EU-Vietnam Free Trade Agreement (EVFTA) and the Comprehensive and Progressive Agreement for Trans-Pacific Partnership (CPTPP), has helped eliminate trade barriers and reduce export tariffs, thereby making Vietnamese seafood more competitive in global markets.

3.2. Challenges for Vietnam's fishery industry.

3.2.1. Climate change and its impact on Vietnam's fishery exports

Climate change is a significant challenge for Vietnam's fishery exports, impacting both supply and production capacity. Rising sea temperatures, changes in weather patterns, and extreme events like floods and typhoons disrupt the aquatic ecosystems that support the fishing industry. For instance, shrimp farming, a critical sector for Vietnam, has been severely impacted by fluctuating water temperatures and salinity levels. According to a study by the Vietnam Association of Seafood Exporters and Producers (VASEP), around 20% of shrimp farms in the Mekong Delta region suffered production losses due to irregular rainfall and rising salinity levels in 2020.

The effect of climate change is not limited to farming. Marine fishing has also been affected, with key fish species like tuna and pangasius showing signs of migration or declining populations due to warmer waters. This has led to lower catches for fishermen, further exacerbating the pressure on supply chains. A 2022 report from the World Bank highlighted that Vietnam's fishery sector could lose up to $400 million annually due to these climate-related disruptions by 2030, leading to increased production costs and reduced supply to international markets.

As a result of these disruptions, Vietnam's seafood exports face price volatility and supply shortages, making it difficult for the country to maintain its competitive edge in global markets. The unpredictability of harvests and the increased costs of adapting to climate change make it harder for Vietnamese exporters to meet demand in established markets, such as the EU, where seafood is highly valued for its consistency and quality. Without the ability to ensure stable supply chains, Vietnam risks losing market share to competitors that are less affected by the impacts of climate change.

3.2.2. Increasing competition from other countries

The global seafood export market has become increasingly competitive, and Vietnam's position as one of the top exporters faces rising threats from countries such as Thailand, India, and Indonesia, which have also established robust seafood industries. These countries are able to offer seafood products at competitive prices and with improved production efficiencies. Vietnam's primary export, shrimp, is especially vulnerable to this increased competition.

In recent years, Thailand has gained market share in the global shrimp market by offering competitive prices and a reputation for high-quality products. According to a report by SeafoodSource, Thailand's shrimp exports reached $4.2 billion in 2022, making it the world's second-largest exporter, just behind Ecuador. This is in contrast to Vietnam, where shrimp exports have stagnated, despite the country's growing production. The issue lies in the cost of production, which remains higher in Vietnam due to climate impacts, higher labor costs, and reliance on imported feed and equipment.

India is another significant competitor, particularly in the shrimp farming sector. India has benefited from government subsidies, low labor costs, and a well-established farming infrastructure, enabling it to produce shrimp at a much lower cost than Vietnam. India's shrimp exports reached $7 billion in 2022, with key markets including the US and EU, regions that are also major buyers of Vietnamese seafood. India's expansion into these markets further intensifies competition for Vietnam.

In addition to shrimp, other key products like pangasius fish face competition from countries such as China, Bangladesh, and Myanmar, where lower production costs and the ability to scale production more efficiently have made them strong competitors in international markets.

As a result of this competition, Vietnam's seafood industry faces pressure to maintain quality while also reducing production costs. Without significant improvements in efficiency and sustainability, Vietnam may struggle to retain its market share, particularly in the EU and US markets, where price sensitivity and competition are growing.

3.2.3. Trade wars and their impact on Vietnam's fishery exports

Trade wars, particularly between major economies like the United States and China, have created significant uncertainty for the global seafood market, and Vietnam's seafood exports are not immune to these tensions. Trade wars lead to higher tariffs, market access restrictions, and fluctuating demand, all of which can affect Vietnam's ability to maintain stable export volumes.

In 2018, the U.S.-China trade war caused a shift in seafood trade patterns. China, a major importer of U.S. seafood, faced increased tariffs on American goods, including seafood. As a result, China turned to alternative suppliers, including Vietnam, to fill the gap in its seafood market. While this presented an opportunity for Vietnam's fishery exports, the situation was volatile. The U.S. imposed tariffs on Vietnamese catfish and shrimp exports in response to concerns over anti-dumping practices and unfair trade subsidies, which complicated the trade dynamics.

Furthermore, ongoing tariffs between the U.S. and China affect Vietnam's exports indirectly by disrupting global supply chains and raising the costs of raw materials. For example, Vietnam imports shrimp feed, processing equipment, and packaging materials from various countries, including China. Higher tariffs on these materials increase the cost of production for Vietnamese exporters, making them less competitive in key markets.

The Vietnamese seafood industry also faces uncertainty due to ongoing geopolitical tensions and trade disputes, which have distorted global trade flows. As a result, businesses in Vietnam must adapt to rapidly changing trade environments, which can disrupt long-term planning and strategies. For instance, a sudden escalation in trade conflicts can cause fluctuations in demand, forcing producers to quickly find alternative markets or adjust production to avoid supply shortages.

3.2.4. Market barriers

Market barriers play a critical role in limiting Vietnam's seafood export potential, particularly in key trade agreements like the EU-Vietnam Free Trade Agreement (EVFTA) and the Comprehensive and Progressive Agreement for Trans-Pacific Partnership (CPTPP). These agreements impose strict regulations on sustainability, quality, and traceability, which can be difficult for Vietnam's seafood sector to fully comply with.

The EVFTA requires that Vietnamese seafood products meet high standards of sustainability, particularly regarding traceability and environmental impact. This includes ensuring that seafood is sourced responsibly and is free from illegal, unreported, and unregulated (IUU) fishing practices.

However, despite Vietnam's efforts to improve sustainability, the EU's IUU yellow card has been a significant market barrier, restricting access to one of the largest seafood markets globally. The IUU yellow card means that Vietnamese seafood must meet stringent proof of sustainable sourcing and traceability, or face the risk of being banned from the EU market.

The CPTPP also imposes similar standards for environmental and labor practices, which can increase the cost of production and compliance. These standards are particularly challenging for smaller producers, who lack the resources to comply with international certifications and sustainability requirements. Without proper certification, Vietnamese seafood faces a competitive disadvantage in CPTPP markets, where demand for sustainably sourced seafood is rising.

For Vietnam's seafood exporters, meeting these standards involves significant investment in compliance systems, training, and traceability technologies. Failure to meet these market requirements can result in loss of market access and reduced competitiveness, especially in high-value markets like the EU and Japan.

4. Comparative analysis of CPTPP and EVFTA

4.1. Overview of EVFTA

The EU-Vietnam Free Trade Agreement (EVFTA) is a new-generation FTA between Vietnam and the 27 EU member states. Negotiations for EVFTA concluded on December 1, 2015, and its text was published on February 1, 2016. The agreement was divided into two parts: the Trade Agreement (EVFTA) and the Investment Protection Agreement (EVIPA), with both finalized after legal reviews in 2018. The two agreements were signed on June 30, 2019, and ratified by the European Parliament and Vietnam's National Assembly in early 2020. The EVFTA took effect on August 1, 2020, while the EVIPA is still pending ratification by all EU member states.

4.2. Overview of CPTPP

The Trans-Pacific Partnership (TPP) was a Free Trade Agreement (FTA) involving twelve countries: the United States, Canada, Mexico, Peru, Chile, New Zealand, Australia, Japan, Singapore, Brunei, Malaysia, and Vietnam. Officially signed on February 4, 2016, the agreement was initially anticipated to take effect in 2018. However, the withdrawal of the United States in January 2017 prevented the agreement from meeting the required conditions for implementation. In November 2017, the remaining eleven TPP members unanimously agreed to rename the agreement the Comprehensive and Progressive Agreement for Trans-Pacific Partnership (CPTPP). The CPTPP was formally signed on March 8, 2018, excluding the United States, and came into effect on December 30, 2018, for Australia, Canada, Japan, Mexico, Singapore, and New Zealand. Subsequently, the

agreement was implemented for Vietnam on January 14, 2019, and for other members—Peru, Malaysia, Chile, and Brunei—on various dates between 2019 and 2023.

4.3. EVFTA's regulations about fishery export

Firstly, the agreement stipulates the immediate elimination of 50% of tariffs, with the remainder to be phased out over a period of 3 to 7 years. For instance, frozen and whole tiger shrimp will benefit from an immediate 0% tariff. Other shrimp products will see gradual tariff reductions over 3 to 5 years, while processed shrimp will experience tariff reductions over a 7-year period. The tariffs on tra fish will decrease over 3 years, with the exception of smoked tra fish, which will take 7 years to reach 0%. Additionally, canned tuna and surimi fish paste will be subject to EU tariff quotas of 11,500 tons and 500 tons, respectively.

Secondly, regarding the rules of origin, Vietnamese seafood exported to the EU must satisfy one of three criteria: (1) It must be of purely Vietnamese origin; (2) It must have a cumulated origin, meaning it is produced from materials originating in either the EU or Vietnam and processed in Vietnam; or (3) It must be entirely produced in Vietnam, with the use of certain non-origin materials. The EVFTA also introduces the possibility of self-certification of origin, in addition to the traditional Certificate of Origin, thereby streamlining the export process.

Thirdly, in terms of Technical Barriers to Trade (TBT), the EVFTA provides for cooperation between Vietnam and the EU to align standards and conformity assessments to facilitate trade. Both parties will harmonize their technical standards with internationally recognized norms, such as those set by ISO, IEC, ITU, and Codex, and will consider each other's standards as equivalent where appropriate.

Fourthly, in relation to Sanitary and Phytosanitary (SPS) measures, both Vietnam and the EU are committed to adhering to WTO SPS rules and international standards, including those set by Codex, OIE, and IPPC. The agreement provides for the exchange of lists of compliant food exporters and allows flexibility for Vietnam in meeting SPS requirements. This flexibility may be in the form of grace periods, the proposal of equivalent measures, or the provision of technical assistance to support gradual improvements in compliance. Required documents include health certifications, traceability, and contaminant standards.

Fifthly, with respect to trade defense measures, including anti-dumping and countervailing measures, both Vietnam and the EU agree that such measures may be employed in a manner that is fair, transparent, and consistent with WTO regulations, while also considering the interests of the parties subjected to these measures.

Sixthly, the agreement commits to adhering to measures that protect and sustainably manage marine resources, especially in fisheries listed under specific international agreements. It also

includes strong collaboration efforts in addressing issues related to Illegal, Unreported, and Unregulated (IUU) fishing. Moreover, the EVFTA outlines commitments for the exchange of information and cooperation on monitoring, control, and surveillance measures.

Seventhly, concerning labor commitments, the EVFTA mandates that labor utilized in the production of seafood for export must comply with International Labor Organization (ILO) regulations and its Declaration on Fundamental Principles and Rights at Work. This includes the effective promotion and implementation of core workplace rights principles.

4.4. CPTPP's regulations about fishery export.

Firstly, the agreement mandates the removal of import duties on 97%-100% of tariff lines for goods originating from Vietnam to CPTPP members. For example, Canada undertakes to eliminate import duties on 95% of tariff lines, with seafood exports being entirely exempt from import duties, set at a rate of 0%. The rate of 0% is also applied with other members in the CPTPP, benefiting Vietnam's fishery exports.

Secondly, Vietnam's seafood exports to member countries will follow rules of origin, including "wholly obtained" goods and Product-Specific Rules of Origin (PSR). Seafood entirely sourced from Vietnam is considered as originating from the country, while materials from other CPTPP members used in seafood production will also be deemed of Vietnamese origin under the accumulation provision.

Thirdly, the agreement addresses Technical Barriers to Trade (TBT), aiming to prevent undue restrictions on the trade of seafood products. The agreement mandates that any technical regulations regarding product standards, including packaging, labeling, and quality requirements, must be transparent and non-discriminatory. These provisions ensure that seafood exports from Vietnam are not subject to unnecessary barriers, thereby facilitating smoother trade flows between CPTPP member countries.

Fourthly, CPTPP places considerable emphasis on Sanitary and Phytosanitary (SPS) measures, which are essential for ensuring the health and safety of both human and animal populations. Vietnam's seafood exports must therefore adhere to the SPS regulations established by the importing countries to maintain market access. The agreement encourages transparency in the application of SPS measures and ensures that these regulations are based on scientific evidence and international standards.

Fifthly, under the CPTPP, trade protection measures include general self-protection provisions that allow the exclusion of products from CPTPP member countries. There are also specific self-protection measures that apply to one or more member countries. In addition, the CPTPP includes

provisions for anti-dumping and countervailing measures, which are similar to those under the World Trade Organization (WTO).

Sixthly, the agreement incorporates provisions designed to promote sustainable fisheries and combat illegal, unreported, and unregulated (IUU) fishing. Member states are encouraged to adopt responsible and environmentally sustainable fishing practices to prevent the depletion of marine resources. This includes commitments to limit subsidies that may contribute to overfishing and to ensure that fishery products meet stringent traceability standards. These regulations are designed to support the long-term viability of the fishing industry, both in Vietnam and across the CPTPP region.

Seventhly, concerning labor commitments, the CPTPP also mandates that labor utilized in the production of seafood for export must comply with International Labor Organization (ILO) regulations in 1998.

4.5. Conclusions of comparative analysis between CPTPP and EVFTA

Vietnam's participation in global trade has been significantly shaped by two major free trade agreements that it participated in: the Comprehensive and Progressive Agreement for Trans-Pacific Partnership (CPTPP) and the European Union-Vietnam Free Trade Agreement (EVFTA). Moreover, Vietnam's participation in these two new FTAs has opened a new and brighter door for fishery exports. The implementation of EVFTA and CPTPP present a significant opportunity for Vietnam to expand its presence and compete effectively with major regional competitors.

The similarities and differences in provisions concerning the fishery industry between CPTPP and EVFTA can be described in Table 1 and Table 2

Table 1. Common provisions in fishery products of CPTPP and EVFTA

Provisions	Description
Cutting tariffs	Both agreements emphasize zero tax for aquatic products.
Market access	Both agreements provide greater market openness for Vietnam, allowing Vietnamese fishery firms to expand its export markets, especially, into new markets such as Canada, Peru, and Mexico.
Shrimp import-export	Both agreements provide Vietnam with benefit of reduced import duties on raw shrimp and export duties on processed shrimp when trading with the EU and CPTPP member countries.
Labor commitments	Both agreements require compliance with ILO labor standards and fundamental principles of worker rights.

Source: Center for WTO and International Trade

Table 2. Differences in the provisions regarding the fishery industry between CPTPP and EVFTA

Provisions	CPTPP	EVFTA
Commitments on Tariff Elimination	97%-100% of tariff lines removed for Vietnamese seafood exports.	Immediate removal of 50% of tariffs, with the rest phased out over 3 to 7 years.
Commitments on Rules of Origins	Provisions for non-discriminatory product standards for labeling, packaging, and product quality. Ensures transparency in regulatory practices.	Products must meet one of three criteria: (1) Purely Vietnamese origin; (2) Cumulated origin (materials from EU or Vietnam, processed in Vietnam); (3) Produced in Vietnam with limited non-origin materials.
Compliance with IUU fishing	While CPTPP encourages compliance with international environmental standards, e.g. IUU, the enforcement mechanisms are less stringent compared to the EU.	Strict IUU fishing measures. Non-compliance could lead to sanctions or a ban on seafood exports to the EU
Sanitary and Phytosanitary (SPS) Measures	Compliance with SPS measures and WTO regulations for food safety, animal health, and environmental protection. Ensures transparency and science-based regulations.	Vietnam and the EU must comply with WTO SPS rules and international standards (Codex, OIE, IPPC).
Technical Barriers to Trade (TBT)	Requires transparent technical regulations for packaging, labeling, and product quality standards.	Requires cooperation between Vietnam and the EU to align standards and conformity assessments.
Trade Defense Measures	Allow exclusions for certain goods, with anti-dumping and countervailing measures aligned with WTO rules	Allows for anti-dumping and countervailing duties, ensuring they are fair and WTO-compliant.

Source: Author's compilation

In summary, gaining a comprehensive understanding of the similarities and differences in the fishery industry provisions of the EVFTA and CPTPP is essential for effectively navigating the complexities of international trade. This knowledge is one of the most important keys for Vietnam to

maximize the benefits offered by these trade agreements and enhance its competitiveness in global seafood markets.

5. Data collection and model selection

5.1. Data collection

The data used in this research was carefully compiled from several reputable international databases, primarily the International Trade Centre (ITC), the World Bank, and the World Trade Organization (WTO), focusing specifically on Vietnam's exports of fish and fishery products to its trading partners. The dataset comprises 860 observations, covering Vietnam's exports to 27 EU countries participating in the EVFTA, as well as 10 CPTPP partner countries, for the period spanning 20 years (2004–2023).

The key classification system utilized in data collection is the Harmonized System (HS), developed by the World Customs Organization (WCO). The HS is an internationally standardized nomenclature designed for categorizing traded products uniformly across countries, facilitating consistent tracking of international trade flows, tariff calculations, and statistical reporting. Complementary to the HS system, the Multilateral Trade Negotiations (MTN) Categories developed by the World Trade Organization (WTO) provide practical groupings of traded products that share common characteristics relevant to international trade policy discussions and tariff negotiations.

Specifically, the study focuses on fishery products classified under the MTN category K00 - Fish and fish products. This category includes various seafood products, such as fresh, chilled, frozen, processed fish, crustaceans, molluscs, and other aquatic products. By selecting these particular HS codes within the MTN K00 category, the research ensures a targeted and accurate analysis of Vietnam's fishery exports.

The export data for these fishery products was carefully extracted from the International Trade Centre (ITC) database, which provides detailed international trade statistics. Additionally, complementary economic and demographic variables, such as GDP, population, geographical distances, official exchange rates, and trade openness indicators, were gathered from the World Bank database and relevant national statistics sources.

Based on the collected data, the study formulates the following gravity model to analyze the impact of these trade agreements on Vietnam's fishery export performance.

5.2. Model selection

The gravity model, first conceptualized by scholars Tinbergen (1962) and Poyhonen (1963), serves as the foundation for this research. It is widely applied to analyze and explain the patterns and

scale of international trade flows. The model, structured around the trade interactions between two countries, denoted as i and j, is represented as follows (Yihong & Weiwei, 2006):

$$X_{ij} = A \cdot \frac{(Y_i \cdot Y_j)}{D_{ij}} \quad (1)$$

In this equation, X_{ij} represents the trade volume between countries i and j, and A is a constant. The variables Y_i and Y_j denote the economic scale of these two countries, while D_{ij} stands for the distance between them.

The gravity model plays a pivotal role in predicting changes in export activities that follow the implementation of formal trade agreements. It helps identify factors such as the GDP and population of partner countries, tariff barriers, and geographical distance, all of which are critical in understanding the effects of Free Trade Agreements (FTAs) on trade flows.

We are mainly interested in quantifying the effects on Vietnam's fishery exports under CPTPP and EVFTA. Given this, we estimate the following gravity equation:

$$\begin{aligned} \ln EX_{it} = \beta_0 + \beta_1 \ln GDP_{it} + \beta_2 \ln Pop_{it} + \beta_3 \ln GDP_{jt} + \beta_4 \ln Dis_{jt} + \beta_5 \ln Open_{jt} \\ + \beta_6 \ln ER_{it} + \beta_7 CPTPP_{it} + \beta_8 EVFTA_{it} + \varepsilon \end{aligned} \quad (2)$$

EX_{it} is the export value of fish and fish products from Vietnam to each trading partner at time t, measured in US dollars (US$ million). This is the dependent variable in the model, representing the volume of trade between Vietnam and each trading partner. The choice of fish and fish products as the focus of this variable is directly related to the research's aim of analyzing Vietnam's fishery export performance under the CPTPP and EVFTA trade agreements. Fish and fish products are a key export sector for Vietnam, and the changes in export volumes are expected to reflect the direct impact of these trade agreements.

GDP_{it} is the GDP of the importing country i at time t, measured in US dollars (US$ billion). The GDP of the importing country is a key determinant of the demand for imports. A larger GDP generally indicates a stronger economy with more capacity to import goods, including fishery products.

Pop_{it} is the population of the importing country i at time t, measured in millions of people. The population of the importing country provides insight into its market size. A larger population usually means a larger domestic market for goods, including imported goods like fishery products.

GDP_{jt} is Vietnam's Gross Domestic Product (GDP) at time t, measured in US dollars (US$ billion). Vietnam's GDP is included to reflect the economic size of Vietnam, which is crucial for assessing its trade capacity and production potential. A larger economy generally leads to greater export capacity, as more goods and services are produced for trade.

Dis_{jt} is the geographical distance between Vietnam and each trading partner. Distance is a key factor in international trade, as it influences transportation costs and logistical barriers. Greater distances typically lead to higher trade costs, which can reduce the volume of trade.

$Open_{jt}$ is the trade openness of Vietnam at time t, indicating the degree of Vietnam's integration into the global economy. Trade openness measures the extent to which Vietnam integrates into the global economy. A higher trade openness often corresponds to a more liberal trade environment, making it easier for goods to flow in and out of the country.

ER_{it} is the official exchange rate of the Vietnamese Dong (VND) relative to the currency of the importing country i at time t. Exchange rates play a significant role in trade flows by affecting the relative prices of imports and exports. A stronger Vietnamese Dong makes exports more expensive for foreign buyers, while a weaker Dong can stimulate exports by making them cheaper

$CPTPP_{it}$ is a dummy variable representing the effectiveness of the Comprehensive and Progressive Agreement for Trans-Pacific Partnership (CPTPP) at time t for the importing country i. It takes the value of 1 if the country is part of the CPTPP and 0 otherwise.

$EVFTA_{it}$ is a dummy variable representing the effectiveness of the European Union-Vietnam Free Trade Agreement (EVFTA) at time t for the importing country i. It takes the value of 1 if the country is part of the EVFTA and 0 otherwise.

ε is the error term.

Table 3. The description of variables and data sources

Variable	Variable Description	Data Source	Expected Sign
EX	Export value of fish and fish products (US$ million) from Vietnam to each trading partner	International Trade Centre database	+
GDP	GDP (US$ billion) of each country	World Bank database	+
POP	Population (million people) of each country	World Bank database	+
Dis	Geographical distance (km) between Vietnam and each country	CEPII database	-

ER	Official exchange rate of trading partners	World Bank database	+
Open	Trade openness of Vietnam (%)	International Trade Centre database	+
CPTPP	Dummy variable for the effectiveness of CPTPP	Author's calculation	+
EVFTA	Dummy variable for the effectiveness of EVFTA	Author's calculation	+

Source: Author's compilation

Normally, the Ordinary Least Squares (OLS) method will be used in estimating gravity models due to its simplicity and the fact that it provides consistent estimates when certain assumptions are met, such as the error term being homoscedastic. OLS also offers intuitive results and is widely applied in various econometric studies. However, in the context of this research, OLS suffers from some significant flaws. Specifically, it becomes inconsistent in the presence of heteroscedasticity, as the variance of the error term is correlated with the regressors. Additionally, OLS excludes zero trade flows due to the logarithmic transformation, which can introduce sample selection bias and lead to inconsistent estimates (Santos Silva and Tenreyro, 2003).

To address these issues, we have chosen to use Poisson pseudo-maximum likelihood (PPML) as the estimation method. PPML allows us to avoid the problems related to zero trade and heteroscedasticity. Moreover, PPML is consistent without making specific assumptions about the distribution of the dependent variable, making it a more robust and reliable method for our analysis. This choice of method helps ensure the accuracy and consistency of our results, especially when dealing with data that includes zero trade flows and exhibits heteroscedasticity (Santos Silva and Tenreyro, 2011).

In order to correct for the problem of heteroscedasticity and the resulting bias in the log-linear specification, we employ the PPML estimator and estimated the gravity equation in multiplicative form as follows:

$$EX_{it} = \exp\begin{pmatrix}\beta_0 + \beta_1 \ln\mathrm{GDP}_{it} + \beta_2 \ln\mathrm{Pop}_{it} + \beta_3 \ln\mathrm{GDP}_{jt} + \beta_4 \ln\mathrm{Dis}_{jt} + \beta_5 \ln\mathrm{Open}_{jt} \\ +\beta_6 \ln\mathrm{ER}_{it} + \beta_7 \mathrm{CPTPP}_{it} + \beta_8 \mathrm{EVFTA}_{it}\end{pmatrix} + \varepsilon \qquad (3)$$

6. Empirical results

The structured summary of key statistics, encompassing the mean, maximum, minimum, and standard deviation for each variable under investigation, is comprehensively delineated in Table 4. This presentation is intended to provide a foundational comprehension of the dataset characteristics, thereby facilitating a nuanced interpretation of the empirical results derived from the table.

Table 4. Key statistics of the dataset

Variable	Obs	Mean	Std. dev.	Min	Max
EX_it	860	134245.4	303031.4	0	2166138
GDP_it	860	1349.042	3269.491	6.10414	27720.71
Pop_it	860	62.95526	207.9345	.352911	1412.36
GDP_jt	860	219.4925	118.6294	45.42786	429.717
Dis_jt	860	8119.528	3856.492	868.035	18993.92
Open_jt	860	147.755	19.63754	113.9777	186.6758
ER_it	860	14927.16	11156.68	13.36084	51672.82
CPTPP_it	860	.0430233	.2030275	0	1
EVFTA_it	860	.1255814	.3315698	0	1

Source: Author's compilation

In the correlation matrix presented in Table 5, it is evident that the fishery export variable (EX_it) exhibits positive correlations with variables such as GDP_it, Pop_it, GDP_jt, Open_jt and CPTPP_it. Conversely, variables including Dis_jt, ER_it and EVFTA_it demonstrate negative correlations with Vietnam's fishery goods export value.

Table 5. Correlation matrix

	EX_it	GDP_it	Pop_it	GDP_jt	Dis_jt	Open_jt	ER_it	CPTPP_it	EVFTA_it
EX_it	1.0000								
GDP_it	0.8468	1.0000							
Pop_it	0.4755	0.5966	1.0000						
GDP_jt	0.1646	0.0858	0.0089	1.0000					
Dis_jt	-0.1273	0.0579	-0.1765	0.0000	1.0000				
Open_jt	0.1197	0.0634	0.0062	0.7116	-0.0000	1.0000			
ER_it	-0.1369	0.0147	-0.1745	0.1209	0.1466	0.0413	1.0000		

CPTPP_it	0.1291	0.0060	-0.0137	0.2953	0.0563	0.2748	-0.0860	1.0000	
EVFTA_it	-0.1174	-0.0828	-0.0846	0.5395	0.0276	0.5263	0.1661	-0.0804	1.0000

Source: Author's compilation

The gravity equation was estimated for the collected data using the OLS and PPML estimators. Tests for model deficiencies were conducted with the OLS estimation, specifically the tests for multicollinearity, heteroskedasticity and autocorrelation. In the examination for multicollinearity, the Variance Inflator Factor for all variables yielded results less than 10, as shown in Table 6. Thus, it can be concluded that there is no presence of multicollinearity is present in the model.

Table 6. Variance Inflation Factor

Variable	**VIF**	**1/VIF**
lnPop_it	6.53	0.153080
lnGDP_it	6.28	0.159250
lnOpen_jt	1.81	0.553459
lnGDP_jt	1.61	0.621812
EVFTA_it	1.58	0.632960
lnER_it	1.24	0.809167
CPTPP_it	1.20	0.833525
lnDis_jt	1.08	0.925108
Mean VIF	2.67	

Source: Author's compilation

To test for heteroskedasticity in the model, the Breusch–Pagan/Cook–Weisberg test was employed. The test indicates the presence of heteroskedasticity and resulting inconsistency in the log-linearized estimations. The Wooldridge test for autocorrelation in panel data was also used to detect the presence of autocorrelation in the model. The test shows that there is statistically significant presence of first-order autocorrelation with the model. The detailed results of the tests will be shown in Table 7.

Table 7. Results of tests for model deficiencies

Selected tests	**Breusch–Pagan/Cook–Weisberg test for heteroskedasticity**	**Wooldridge test for autocorrelation in panel data**
Null hypothesis	H0: Constant variance	H0: no first-order autocorrelation

Prob > chi2	0.0000	0.0000

Source: Author's compilation

Therefore, to deal with heteroskedasticity, autocorrelation and zero trade data in the discussion that follows, we use the results obtained from the PPML estimator with clustered standard errors (Table 8).

Table 8. PPML estimation results

EX_it	**Coefficient**	**Robust std. err.**	**z**	**P>z**	**[95% conf. interval]**	
lnGDP_it	1.325467	.0922551	14.37	0.000	1.144651	1.506284
lnPop_it	-.4635175	.0834034	-5.56	0.000	-.6269852	-.3000497
lnGDP_jt	.317636	.0463315	6.86	0.000	.2268278	.4084441
lnDis_jt	-.5007897	.0744584	-6.73	0.000	-.6467254	-.3548539
lnOpen_jt	.0416155	.2228539	0.19	0.852	-.3951701	.4784011
lnER_it	-.1430871	.020331	-7.04	0.000	-.1829352	-.1032391
CPTPP_it	.1829146	.066364	2.76	0.006	.0528435	.3129857
EVFTA_it	-.5903587	.1345241	-4.39	0.000	-.8540211	-.3266964
_cons	14.22669	1.371785	10.37	0.000	11.53804	16.91534
Number of observations				860		
Pseudo log-likelihood				-11332209		
R-squared				.93791342		

Source: Author's compilation

From the estimated results, it can be seen that most of the variables in the model perform well indicating that Vietnam's fishery export flows to EU and CPTPP countries could be effectively explained by the gravity model apart from the variable of Vietnam's trade openness, as the p-value for the coefficient of the variable Open_jt is not statistically significant. The R-squared value of 0.9379 indicates that the model explains approximately 93.8% of the variation in Vietnam's fishery exports, demonstrating the robustness of the regression in explaining the export patterns.

The size of economies proxied by variables GDP_it and GDP_jt are found to have positive effects on Vietnam's fishery exports. Specifically, for every 1% increase in the GDP of Vietnam, Vietnam's fishery export value to partners increases by 0.32% while a 1% increase in GDP of the importing country induces an increase of about 1.33% in the export flow of Vietnam. These coefficients are highly statistically significant at 1 percent level. The positive effect of GDP is quite consistent with

the theoretical background. From the supply side, an increase in the GDP of Vietnam means that the production capacity of the economy increases, thus potentially increasing the exportability. Meanwhile, the growth of the importing country's GDP implies an increase in the demand for goods that boosts the import demand from Vietnam. This has been found in other studies related to Vietnamese export such as Nguyen (2020) and Tran (2017).

The variable of population of the importing countries Pop_it has an inverse relationship with Vietnam's fishery export volume with statistically significant evidence, which is inconsistent with our expectations. This finding could reflect factors such as increased domestic consumption, which may reduce the need for fishery imports, or changes in trade dynamics influenced by population growth.

The estimated coefficient of variable Dis_jt that measures the geographical distance between the two countries is also correctly signed and in line with expectation.. The close distance will reduce transportation costs, leading to the promotion of export activities (Bui and Chen, 2017). As seen from the result of this study, an increase of 1% in the distance would likely result in a decrease of 0.5% in export value. The distance coefficient is at 1 percent level of significance. This factor is also consistent with the PPML estimation from Nguyen (2020).

The effect of the exchange rate represented by the variable ER_it is surprisingly inconsistent with expectation. The result indicates that a 1% depreciation of the Vietnamese dong (VND) relative to the importing country's currency is associated with a 0.14% decrease in fishery exports. In theory, when Vietnam Dong depreciates, production costs for domestic firms fall relative to those of foreign competitors, making the country's exports more competitive in foreign markets. However, in this study, an increase in the exchange rate implies a depreciation of Vietnamese currency has the effect of reducing exports. The unexpected negative correlation between exchange rates and fishery exports could stem from several factors. Firstly, Vietnam's fishery sector is heavily dependent on imported inputs like feed and aquaculture equipment; thus, a depreciating Vietnamese Dong could increase production costs, offsetting any export competitiveness gained from a weaker currency. Secondly, prolonged or frequent currency fluctuations can lead to uncertainty, deterring long-term contracts with international buyers. Thirdly, due to contracts being denominated in foreign currencies, exporters might have limited short-term gains from currency depreciation. Going forward, currency stability will be critical for maintaining competitiveness, as volatile exchange rates could undermine cost management, pricing stability, and profitability in the seafood export industry.

The coefficient for CPTPP_it is 0.1829146, and it is statistically significant ($p = 0.006$). The semi-elasticity interpretation is that when the CPTPP agreement is in effect, fishery exports increase by $100 \times (e^{0.1829146} - 1) \approx 20.07\%$ compared to when the agreement is not in place. This suggests

that the CPTPP positively impacts Vietnam's fishery exports by reducing trade barriers and facilitating smoother market access for Vietnamese products.

The coefficient for EVFTA_it is -0.5903587, and it is statistically significant ($p < 0.000$). The semi-elasticity interpretation indicates that the EVFTA agreement leads to a $100 \times (e^{-0.5903587} - 1) \approx 44.59\%$ decrease in fishery exports. This negative effect, which is inconsistent with our expectations, could be attributed to various factors, such as increased competition from other exporters, non-tariff barriers, or sector-specific challenges that may have arisen due to the implementation of the trade agreement. Notably, Vietnam's fishery export to EU countries has faced challenges as Vietnam received the yellow card - a warning given for its failure to adequately address illegal, unreported, and unregulated (IUU) fishing in its waters from the European Commission (EC). The yellow card raises concerns for EU buyers because they could face penalties if they are caught importing illegal or unsustainable seafood products. The EU IUU Regulation requires that all seafood imported into the EU must be legally sourced, and buyers who unknowingly purchase illegal products may face sanctions.

7. Conclusions and implications

Vietnam's fishery export sector has shown notable growth, becoming one of the world's top exporters. The integration of Vietnam into global trade networks, notably through CPTPP and EVFTA, has provided significant opportunities to boost export volumes, improve market access, and foster economic cooperation. However, this growth trajectory has also been shaped by numerous challenges, such as non-tariff barriers, compliance with international regulations, and environmental concerns.

This research has explored the trade impacts of the CPTPP and EVFTA on Vietnam's fishery exports, employing a gravity model and regression analysis to assess the effect of these trade agreements on export performance. The results reveal key patterns and challenges:

- The CPTPP has been particularly beneficial, with Vietnam's fishery exports increasing significantly due to tariff reductions and smoother market access, particularly to countries such as Canada, Mexico, and Japan.
- On the other hand, the EVFTA, although offering tariff reductions and market access, has had a more mixed impact on Vietnam's fishery exports, with challenges related to the IUU fishing regulations and stringent EU standards. The yellow card issued by the EU has had an adverse impact on Vietnam's exports to the EU, primarily due to concerns over sustainability and compliance with international fishing norms.

Moreover, despite the advantages of these trade agreements, Vietnam faces several challenges including shrimp price hikes, competition from other countries, raw material shortages, and climate change. These factors underscore the vulnerability of the fishery sector to both internal and external pressures.

This study suggests that, in order to maximize the benefits from the CPTPP and EVFTA and overcome the challenges facing Vietnam's fishery sector, several strategies need to be adopted. Below are detailed implications and guidelines to combat the challenges in the Vietnam's fishery industry:

Climate change adaptation strategies

In response to the challenges caused by climate change, Vietnam's fishery sector should prioritize adaptive strategies. The fluctuating water salinity and temperature that affect shrimp farming, as well as the overall impact on marine fishing, may require resilient farming practices. Firms in fishery industry can investing in climate-resilient species that can withstand changing environmental conditions, for example climate-resilient shrimp breeds, would mitigate the negative impact of climate change on production.

Additionally, developing early warning systems for extreme weather events such as typhoons or floods will help seafood farmers better prepare for and reduce the risks of production losses.

Improving production efficiency to counter competition

To combat the growing competition from countries like Thailand, India, and Indonesia, Vietnam's seafood industry needs to focus on making production more efficient. The decline in shrimp exports amid an increase in production has demonstrated that more efficient production processes are required. For this reason, Vietnamese firms can reduce labor costs and improve overall productivity by investing in automation and modern farming technologies. This efficiency can help lower production costs, which remain a challenge due to climate impacts and reliance on imported feed.

Shifting towards value-added products such as processed seafood, ready-to-eat food, and sustainably certified seafood would allow Vietnam to differentiate its products from competitors and sell to high-potential markets that prioritize quality and sustainability. Greater operational efficiency and product diversification can allow Vietnam to retain its competitiveness in the face of lower-cost competitors, especially in markets such as the European Union and the United States.

Diversifying trade partnerships to counter trade war effects

In light of the strains caused by the trade war between the United States and China, Vietnam should diversify its trading partners to avoid over-reliance on any one market and to hedge against risks posed by fluctuating tariffs and trade bans. Expanding into new regions such as the EU, Japan, and emerging markets in Asia and the Middle East will help secure alternative sources of demand. Vietnam can reduce its exposure to the impacts of trade wars, while also adapting to changing trade

policies, by strengthening trade relationships with countries that value sustainability and high-quality seafood. In addition, enhancing the domestic supply chain will make Vietnam's exports less reliant on imported materials, further reducing vulnerabilities to global trade disruptions.

Strengthening compliance with sustainability standards to overcome market barrier

To meet the stringent requirements of international trade agreements like the EVFTA and CPTPP, Vietnam should invest in traceability systems and certification programs that ensure the sustainability of its seafood products. By improving compliance with international sustainability standards, the fishery industry of Vietnam can regain and expand its access to important markets such as the EU and the country members in the FTAs, which place a high premium on sustainably sourced seafood.

Furthermore, the government may need to offer financial and technical support to SMEs to ensure that the small producers have access to such high standards and not be left behind to be excluded from the global market. With these market challenges taken on squarely, Vietnam will achieve a stronger position in international trade agreements and have the IUU yellow card removed.

Strengthening enforcement against IUU fishing

This yellow card has restricted Vietnam's seafood access to one of the world's largest markets - the EU. To address this challenge, Vietnam must enhance its enforcement against Illegal, Unreported, and Unregulated (IUU) fishing practices. Some recommendations such as improve efforts to minimize violations should include strengthening the inspection and supervision of fishing vessel activities, increasing awareness campaigns for fishermen, reducing the number of vessels while focusing on quality and scale, and strictly enforcing penalties for any violations will help ensure that Vietnam's seafood supply chain is transparent and meets international standards. Strengthening enforcement and improving traceability are the two measures that Vietnam can take to ensure its seafood exports meet the EU's stringent requirements, unlocking access to this valuable market.

In conclusion, addressing the challenges of Vietnam's fishery sector is a task that involves sustainability, operational efficiency, and global standards. By adopting climate change adaptation measures, enhancing production efficiency, and expanding trade partners, Vietnam will be in a stronger position to cope with the heightened competition and market volatility engendered by trade wars. Strengthening enforcement of sustainability standards, particularly in the context of the EVFTA, CPTPP, and the IUU yellow card, is necessary in order to preserve access to high-value markets like the EU. Strengthening IUU fishing enforcement and traceability will also help restore Vietnam's reputation as a responsible and reliable seafood supplier. Through taking such proactive steps, Vietnam can strengthen its position in international trade, safeguard its oceans, and ensure the long-term viability of its seafood sector.

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